



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁷ : C12N 15/53, 15/54, 15/55, 15/60, 15/11, 15/82, 9/10, 9/18, 9/88, 9/04, C12P 7/62, C12Q 1/68, C07K 16/40, A01H 5/00, G01N 33/50</p>	A1	<p>(11) International Publication Number: WO 00/32789</p> <p>(43) International Publication Date: 8 June 2000 (08.06.00)</p>
<p>(21) International Application Number: PCT/NL99/00737</p> <p>(22) International Filing Date: 2 December 1999 (02.12.99)</p> <p>(30) Priority Data: 98204018.0 2 December 1998 (02.12.98) EP 99200739.3 12 March 1999 (12.03.99) EP</p> <p>(71) Applicant (for all designated States except US): CENTRUM VOOR PLANTENVEREDELINGS- EN REPRODUK- TIEONDERZOEK (CPRO-DLO) [NL/NL]; Droeve- daalsesteeg 1, NL-6708 PB Wageningen (NL).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): AHARONI, Asaph [IL/IL]; Pinkas 52 Street, Tel-Aviv (IL). LÜCKER, Joost [NL/NL]; Hollasstraat 26, 5991 DA Baarlo (NL). VERHOEVEN, Harrie, Adrianus [NL/NL]; Orionlaan 45, NL-5694 LB Breugel (NL). VAN TUNEN, Arjen, Johannes [NL/NL]; Wim Sonneveldstraat 31, NL-6708 NA Wageningen (NL). O'CONNELL, Ann, Patricia [IE/NL]; Boswinde 29, NL-2633 JH Nootdorp (NL).</p>		<p>(74) Agent: DE HOOP, Eric; Octrooibureau Vriesendorp & Gaade, P.O. Box 266, NL-2501 AW The Hague (NL).</p> <p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</p>
<p>(54) Title: FRUIT FLAVOUR RELATED GENES AND USE THEREOF</p> <p>(57) Abstract</p> <p>DNA sequences encoding enzymes involved in the biosynthetic pathway for aliphatic and/or aromatic ester production in fruit are disclosed. The enzymes have alcohol acyl transferase, alcohol dehydrogenase, pyruvate decarboxylase, thiolase, aminotransferase and esterase activities, respectively. The polypeptides having said activities are disclosed. Expression vectors comprising the DNA sequences may be used for regulating ester formation in fruit. Genetically modified plants and microorganisms may be used for producing esters.</p> <pre> graph TD A[Fatty acids, Amino acids] -- "amino-transferase, thiolase" --> B[Short chain fatty acids, α keto acids] B -- "pyruvate decarboxylase" --> C[Aldehydes] C -- "alcohol dehydrogenase" --> D[Alcohols] B -- "thiolase + Coa" --> E[Acyl - coA's] D -- "alcohol acyl transferase" --> F[Esters] E -- "alcohol acyl transferase" --> F F -- "esterase" --> G[Esters] </pre>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						